Animate Particle Traces

INTRODUCTION

EnSight's powerful particle tracing facility can trace massless particles (either steady-state or transient) through flow fields. Animating the resulting traces often promotes intuitive comprehension of the characteristics of the underlying flow field. Traces are animated by displaying one or more *tracers* on all traces of the trace part. A tracer moves along the path of a trace with length proportional to the local velocity. EnSight provides complete control over all aspects of the tracers including length, speed, and release interval for multiple pulses.

This article covers particle trace animation and assumes that you have already created one or more particle trace parts. See **How To Create Particle Traces** for more information.

BASIC OPERATION

To enable particle trace animation and adjust the animation parameters:

1. **Double-click the desired particle trace part in the Main Parts list.**

2. **Toggle on Animate in the Quick Interaction area.**

3. **Move the mouse cursor into the Graphics Window to activate the animation.**

4. **Click Animate to open the Trace Animation Settings dialog. Make changes as desired (remember to press return for changes to text fields) and move the mouse cursor back into the Graphics Window to view your changes.**
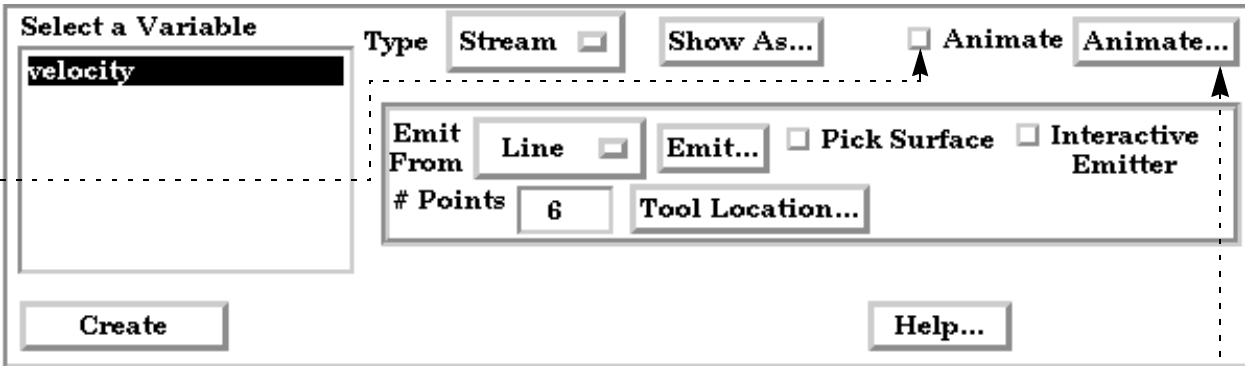
Set the color of the tracers to either Trace Color *(i.e.* the same color as the parent trace part) or Constant (and set the desired color using the Mix... button or the RGB fields.

Set the line width of the tracers.

If transient traces (pathlines), set the Start Time and/or Max Time.

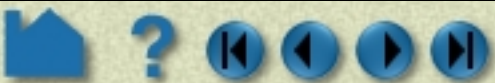Set the tracers length factor (see below).

Set the tracers speed factor (see below).

Set tracers head representation. Either None or Spheres. If Spheres, the radius can be Constant (set by the Scale value) or sized by a variable and scaled by the Scale value. Sphere detail set via Detail field.

Click to load good default values to the Tracer Time, Tracer Delta, and Pulse Intervals fields.
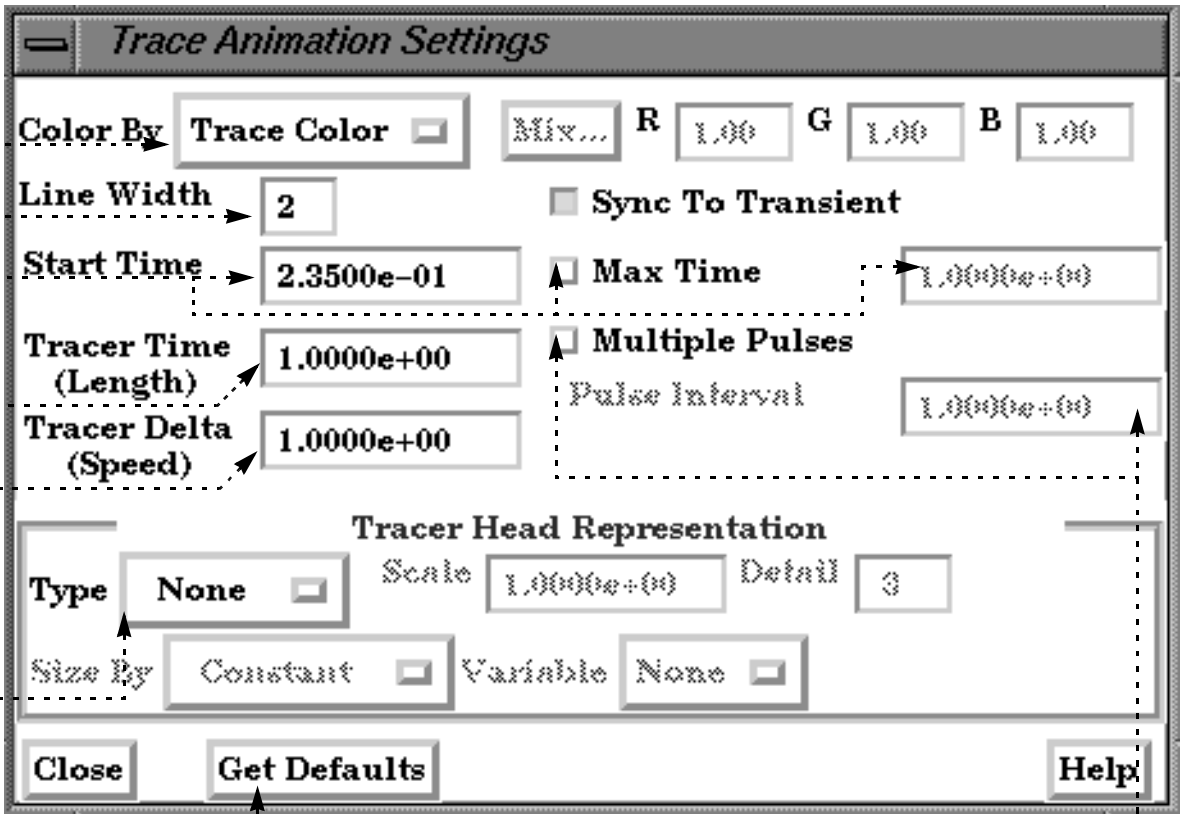
Toggle on Multiple pulses and set the interval between pulses (see below).

Tracer Parameter Descriptions:

Tracer Time (Length)	The Tracer Time (Length) parameter acts as a scaling factor for all tracer lengths (the higher the value the longer the tracer). Tracer length varies as the local velocity changes along the trace. For example, the tracer will lengthen as the leading edge of the tracer moves into a higher velocity region.
Tracer Delta (Speed)	The Tracer Delta (Speed) parameter acts as a scaling factor for the tracer speed (the higher the value the faster the tracer). The speed of the leading and trailing tracer edges varies as the local velocity changes along the trace.
Pulse Interval	The interval between successive tracer emissions when in multiple pulse mode (the higher the value the longer the interval between pulses). Note that the distance between tracers will increase when the local velocity increases.

ADVANCED USAGE

If you have time-dependent data and have calculated transient particle traces (pathlines), you can enable trace animation, load a transient flipbook, and view the animating pathlines simultaneously with the dynamic flipbook. See **How To Create Particle Traces** and **How To Animate Transient Data** for more information.

OTHER NOTES

The parameters in the Trace Animation Settings dialog are *not* specific to the currently selected particle trace part – the settings apply to all currently animating particle trace parts.

SEE ALSO

User Manual: **Particle Trace Animation**